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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/509,789	03/30/2000	HANS-JOSEF STERZEL	48428	9729

26474 7590 10/21/2002

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WASHINGTON, DC 20036

EXAMINER

DOVE, TRACY MAE

ART UNIT	PAPER NUMBER
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1745

DATE MAILED: 10/21/2002

15

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/509,789

Applicant(s)

STERZEL ET AL.

Examiner

Tracy Dove

Art Unit

1745

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

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DETAILED ACTION

This Office Action is in response to the communication filed on 8/12/02. Applicant's arguments have been considered, but are not persuasive. Claims 21-24 are rejected in view of the prior art of record. Claims 1-20 have been canceled. This Action is **Non-Final**.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/12/02 has been entered.

Election/Restrictions

Note Applicant has elected the species represented by formula IIIa in claim 21. Applicant confirmed this in a telephone interview with Herb Keil on 4/24/02.

Priority

Applicant has filed a verified translation of the priority document. The translation of the priority document satisfies the enablement and description requirements of 35 U.S.C. 112, first paragraph ("a molar ratio of LiBF_4 : LiPF_6 from 0.1:9.9 to 9.9:0.1" has been deleted from claim 21). Thus, the verified translation of the priority document removes the Akio reference as prior art.

Claim Objections

The objection to claim 21 has been withdrawn.

Claim Rejections - 35 USC § 102

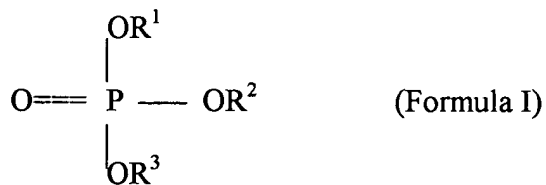
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Claims 21-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Narang et al., US 5,830,600.

Narang teaches nonflammable/self-extinguishing electrolytes for batteries. Novel fire-retardant electrolyte compositions comprise a lithium salt dissolved in a fire-retardant solvent selected from phosphates, phospholanes, cyclophosphazenes, silanes, fluorinated carbonates, fluorinated polyethers and mixtures thereof. See abstract. Narang teaches batteries comprising an anode, a cathode and a fire-retardant electrolyte composition including a lithium salt dissolved in a solvent, wherein the solvent is a phosphate having the structure as shown in Formula I (see col. 3, lines 63-col. 4, lines 10):



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wherein R1, R2 and R3 may be C1-C6 alkyl terminally substituted with 0-3 halogen atoms and containing 0-3 ether linkages. The structure (IIIa) of instant claim 21 is encompassed by Formula I of Narang. Narang specifically disclosed the compound represented by (IIIa) of instant claim 21 in col. 7, lines 57-64. This section of Narang teaches that tris-(methoxyethyl) phosphate (IIIa of instant claims) may be used as the phosphate for the electrolyte solvent. Furthermore, Narang teaches a specific example using tri-(methoxyethyl)phosphate (TMEP) as the solvent and LiPF_6 as the electrolyte salt of the electrolyte of a lithium cell (Table 2). The battery of Narang may be a $\text{Li}_x\text{C}_6/\text{electrolyte}/\text{LiCoO}_2$ type battery. Narang teaches preferred lithium salts include compounds of the formula Li-A , wherein A is an anion which may be BF_4 or PF_6 (col. 10, lines 17-27).

Thus the claims are anticipated.

Response to Arguments

Applicant's arguments filed 8/12/02 have been fully considered but they are not persuasive.

Applicant argues temperatures at which decomposition occurs in the batteries of Narang and those of the instant invention. However, the claims do not contain any limitations regarding decomposition temperatures. Furthermore, claims 21, 23 and 24 do not even recite a battery, the claims are directed toward a composition. Thus, this argument is not applicable to the claimed invention.

Applicant refers to the electrolyte composition including LiPF_6 in TMEP disclosed by Table 2 of Narang. Applicant states "the potential explosivity of the compositions in Table 2 is

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not given. However, one of ordinary skill in this art could reasonably conclude that the systems in Table 2 would exhibit similar behavior to that discussed above because, according to the Narang document itself, exothermic behavior continues above 160°C” (bottom of page 5-top of page 6 of the amendment). The Examiner is not sure what Applicant is attempting to show by this assertion or how such an assertion is supported. Examiner points out page 11, lines 4-14, Example 2 and Example 3 of the instant specification that teach an electrolyte composition including LiPF₆ in TMEP. As stated above, it is unclear how the argument regarding exothermic behavior is applicable to the claimed invention.

Applicant argues that for one to arrive at applicant's claims, one must select one of many solvents disclosed by Narang and combine it with one of many electrolyte salts disclosed by Narang.

Examiner disagrees with Applicant's interpretation of the Narang reference. In col. 3, lines 63-col. 4, lines 14 Narang teaches the solvent of the instant invention. Furthermore, col. 7, lines 57-64 and Table 2 gives specific examples of electrolytes using TMEP (IIIa of instant claims). Thus, one is not selecting from “many solvents”, as asserted by Applicant.

Regarding the teaching of the lithium salt by Narang, Narang is not limited to the examples or preferred teachings. Note that Narang teaches in col. 10, lines 19-27 that “*preferred* lithium salts include compounds of the formula Li-A, wherein A is an anion which may be...BF₄...PF₆...and mixtures thereof”. Both LiBF₄ and LiPF₆ are common lithium salts for lithium secondary batteries. See Linden, Handbook of Batteries, page 36.15. Note the list of twelve salts (col. 10, lines 21-22) disclosed by Narang is not considered to be selecting from “many electrolyte salts” as asserted by Applicant.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tracy Dove whose telephone number is (703) 308-8821. The Examiner may normally be reached Monday-Thursday (9:00 AM-7:30 PM). My supervisor is Pat Ryan, who can be reached at (703) 308-2383. The Art Unit receptionist can be reached at (703) 308-0661 and the official fax numbers are 703-872-9310 (after non-final) and 703-872-9311 (after final).

October 16, 2002



CAROL CHANEY
PRIMARY EXAMINER

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